REMARKS

I. Introduction

For the reasons set forth below, Applicants respectfully submit that all pending claims are patentable over the cited prior art references.

II. The Rejection Of Claims 1-8 Under 35 U.S.C. § 103

Claims 1, 2 and 5-8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamashita et al. (USP No. 6,287,720) in view of Fujiwara et al. (USP No. 6,576,366); and claims 3-4 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamashita and Fujiwara and in further view of Shi et al. (US 2005/0014063). Applicants respectfully traverse these rejections for at least the following reasons.

With regard to the present invention, claim 1 recites a lithium secondary battery comprising: a positive electrode comprising a composite lithium oxide; a negative electrode comprising a material capable of absorbing and desorbing lithium; a separator interposed between said positive electrode and said negative electrode; and a non-aqueous electrolyte, wherein said separator comprises non-woven fabric, at least one of said positive electrode and said negative electrode has a porous film that is adhered to a surface thereof, and said porous film comprises an inorganic oxide filler and a binder.

As discussed in the prior Response to the Office Action, it is admitted in the Office Action that Yamashita fails to disclose a separator comprised of non-woven fabric. Fujiwara is alleged to disclose a series of separator materials including non-woven cloth (col. 9, lines 27-38). It is also alleged in the Response to Arguments that Fujiwara teaches that non-woven cloths and polyethylene (PE) are art recognized equivalents for separator material and accordingly, it would

be obvious to one of ordinary skill in the art to replace the PE layer in Yamashita with a non-woven cloth. Furthermore, the Examiner also alleges that there is no showing of unexpected results from using a separator of the present disclosure over the combination of the cited prior art.

However, these allegations ignore the data exhibited in the specification of the present disclosure. Applicants would direct the Examiner once again to Tables 1 and 2 (see, pages 32 and 36 of the specification) which features a series of examples and comparative examples that show the advantages of the present invention over that of the cited prior art.

As is shown in the data for Comparative Example 1, the performance of a battery having only a non-woven fabric is poor. The defective rate of Comparative Example 1 is 18% and the nail penetration safety data is extremely poor, with high temperatures being generated upon puncture with a nail at various rates (see, Table 2).

Furthermore, the battery of Comparative Example 4 has the same structure as the battery of Example 5, except that Comparative Example 4 uses a PE film instead of polypropylene (PP) non-woven fabric. As Table 2 shows, Example 5 has significantly higher discharge capacity and capacity retention rate than that of Comparative Example 4. In addition, the nail penetration safety data is generally more favorable as well.

Moreover, Comparative Example 2 has no porous film, yet has a higher discharge capacity and a higher retention rate than Comparative Example 4, which, as described above, has both a PE film and porous film. Thus, the combination of PE film and a porous film actually results in a battery with inferior charging characteristics when compared to a battery without a porous film. In contrast, a combination of a PP non-woven fabric and a porous film as shown in

Example 5 or PP-PA (polypropylene-polyamide) non-woven fabric and porous film (Example 24) provides superior characteristics in all areas over batteries either having no porous film, or a porous film combined with a PE film. Thus, contrary to the conclusions set forth in the Office Action, the present invention shows unexpected results in that a PE film and a non-woven fabric are not equivalents, and as such, the present invention is not obvious over the combination of Yamashita and Fujiwara.

In order to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 180 USPQ 580 (CCPA1974). As is clearly shown, Yamashita and Fujiwara do not disclose a lithium secondary battery comprising: a separator interposed between said positive electrode and said negative electrode; and a non-aqueous electrolyte, wherein said separator comprises non-woven fabric, at least one of said positive electrode and said negative electrode has a porous film that is adhered to a surface thereof. Therefore, Applicants submit that Yamashita and Fujiwara do not render claim 1 of the present invention obvious and accordingly, Applicants respectfully request that the § 103(a) rejection of claim 1 be withdrawn.

III. All Dependent Claims Are Allowable Because The Independent Claim From Which They Depend Is Allowable

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as claim 1 is patentable for the reasons set forth above, it is respectfully submitted that all pending dependent claims are also in condition for allowance.

IV. Conclusion

Having fully responded to all matters raised in the Office Action, Applicants submit that all claims are in condition for allowance, an indication of which is respectfully solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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